REMARKS

Claims 1-5 are rejected. Claims 1 and 5 are independent claims. Claim 1-3 and 5 have been amended. Claims 1-5 are pending in the application. Reconsideration of all grounds of rejection in the Office Action, and allowance of all of the pending claims are respectfully requested in light of the following remarks.

Claims 2 and 3 have been objected. In response, corrections to dependent claims 2 and 3 as suggested by the examiner have been made.

The drawings stand objected as they include the reference characters, FIG. 2 #20, 51, not mentioned in the description. Applicant has read the description carefully, however, applicant respectfully points out that reference identifier 20 is in fact mentioned on page 2, line 7 of the specification (temperature-comparison section). As to objection to missing reference character 51, the specification has been amended to include the Identifier 51, which was omitted from line 22, at page 4. FIG. 2 supports the omission of the Identifier 51. Further, applicant accords with the examiners suggested corrections of changing NTC to PTC as described in the specification on 7, line 18. Corrected drawings are attached and in compliance with 37 CFR 1.121(d).

Claims 1, 3, and 5 stand rejected under 35 U.S.C 103(a) as being unpatentable over Furusawa (US 4,739,467). Claim 1, 2 and 4 stand rejected under 35 U.S.C 103(a) as being unpatentable over Eckel et al (US 6,798,341) in view of Furusawa (US 4,739,467).

Applicant respectfully traverses the above stated rejections.

Claim 1, as amended, now recites; "a temperature sensor having **a PTC sensor and an NTC sensor on a single PCB** ,,, wherein the first to fourth resistance pads are

short-circuited with one another selectively according to a type of the temperature sensor so as to vary the polarity of the signals inputted into the differential amplifier." Support for the amendment can be found at least in the specification and the drawings (Page 5, line 15 to 18 and FIG. 4 & 5). Similar features are also recited in amended claim 5.

The present invention can selectively short-circuit the first and fourth resistor pads with one another according to the temperature sensor in use for the temperature controller so as to vary the polarity of signals inputted to the differential amplifier. Therefore, the PTC and NTC sensors can be used simultaneously resulting in cost and time savings because the manufacturing of additional PCB's is not necessary (Page 10, line 1 to 5). Thus, as seen in FIG. 4 and 5, a NTC (FIG 4) or PTC (FIG. 5) configuration can be obtained simultaneously using a single PCB.

Eckel et al (US 6,798,341), as read by applicants, discloses a multifunction sensor device which provides various transducer functions including temperature sensing. According to the specification Eckel uses **a NTC temperature sensor**. (Column 25, Line 34 to line 42)

Furusawa (US 4,739,467), as read by the applicant, discloses a temperature controller for a flow cell used in a spectrophotometer. According to the specification, Furusawa uses **a PTC temperature sensor**. (column 5, line 52 to 55) Therefore the prior art references and the present invention are structurally different.

Accordingly, Furusawa and Eckel fail to teach both the NTC and PTC on a single PCB which can be used simultaneously, as recited in base claims. Both reference use either a NTC or PTC, but not both and not on a single PCB.

Accordingly, it is respectfully submitted that claims 1 and 5 are not anticipated by Furusawa and Eckel, either alone or in combination.

The other claims in this application are each dependent from the independent claim discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration of the patentability of each on its own merits is respectfully requested.

For all the foregoing reasons, it is respectfully submitted that all of the present claims are patentable in view of the cited reference. A Notice of Allowance is respectfully requested.

Should the Examiner deem that there are any issues, which may be best, resolved by telephone communication, please contact Applicant's undersigned Attorney at the number listed below.

Respectfully submitted,

Steve Cha
Registration No. 44,069

Date: September 1, 2005

By: Steve Cha
Attorney for Applicant
Registration No. 44,069

Mail all correspondence to:

Steve Cha, Registration No. 44,069
Cha & Reiter
210 Route 4 East, #103
Paramus, NJ 07652
Tel: 201-226-9245
Fax: 201-226-9246

Certificate of Mailing Under 37 CFR 1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to MAIL STOP AMENDMENT, COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA 22313 on September 1, 2005.

Steve Cha, Reg. No. 44,069
(Name of Registered Rep.)

(Signature and Date)